

CLAIMS

1. A protein crystallizing device comprising:

a protein crystallizing microarray having at least two crystallizing agent holding parts which hold a protein

5 crystallizing agent, and

a plate laminated on said protein crystallizing microarray, said plate having

crystallizing sections corresponding to said crystallizing agent holding parts so that the sections being capable of being filled with a protein-
10 containing sample, and

recessed parts provided between the crystallizing sections.

2. A protein crystallizing device according to claim 1,
15 wherein said crystallizing agent holding parts are made from gels prepared in respectively different protein crystallization conditions.

3. A protein crystallizing device according to claim 1, wherein said protein crystallizing microarray is a
20 microarray having a plurality of hollow tubular bodies in an array.

4. A protein crystallizing device according to claim 1, further comprising a mechanism which presses said protein crystallizing microarray and said plate into contact with
25 each other.

5. A protein crystallizing device according to claim 1, wherein a sealant is filled in said recessed parts.

6. A protein crystallizing device according to claim 1, wherein a capacity of said crystallizing section is less
5 than 0.5 μ l.

7. A protein crystallizing device according to claim 1, wherein a capacity of said crystallizing section is 0.5 μ l or more.

8. A protein crystallizing device according to claim 1,
10 wherein said protein crystallizing microarray has 10 to 1000 of crystallizing agent holding parts.

9. A protein crystallizing device according to claim 1, wherein said plate further has a crystal collection mechanism which collects precipitated crystals in said
15 crystallizing sections.

10. A protein crystallizing device according to claim 1, further comprising a detection mechanism which monitors protein crystallization in said crystallizing sections.

11. A sample filling aid for filling a protein-containing
20 sample into said crystallizing sections of the protein crystallizing device according to any one of claims 1 through 10, comprising:

punched holes having an arrangement corresponding to said crystallizing sections, and a positioning mechanism

which makes the punched holes correspond to said crystallizing sections on said plate.

12. A protein crystallizing device according to any one of claim 1 through claim 10, wherein said plate is formed with the positioning part which matches a position with a sample filling aid according to claim 11.

13. A screening method of protein crystallization conditions using the protein crystallizing device according to claim 12 and the sample filling aid according to claim 11, comprising the steps of:

placing the sample filling aid according to claim 11 on said plate so that said punched holes in the sample filling aid correspond to said crystallizing sections;

adding the protein-containing sample to said punched holes from the top of the sample filling aid so that said crystallizing sections are filled therewith;

taking out said sample filling aid ; and

laminating said plate and said protein crystallizing microarray so that said crystallizing sections and said crystallizing agent holding parts are in contact by corresponding to each other.

14. A protein crystallizing gel having sodium chloride held in a gel-like material comprising a type of monomer selected from a group consisting of acrylamide, 2-

acrylamide-2-methylpropanesulfonic acid, and
methacryldimethylaminoethylmethyl chloride salt.

15. A protein crystallizing gel having 2-methyl-2,4-pentanediol held in a gel-like material containing
5 dimethylacrylamide.
16. A protein crystallizing agent having sodium/potassium phosphate held in a gel-like material containing 2-acrylamide-2-methylpropanesulfonic acid.
17. A protein crystallizing gel having ammonium sulfate
10 held in a gel-like material containing methacryldimethylaminoethylmethyl chloride salt.
18. A protein crystallizing gel having sodium malonate held in a gel-like material containing acrylamide.
19. A protein crystallizing gel having polyethylene glycol
15 6000 held in a gel-like material containing polyoxyethylene monoacrylate.